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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,516	11/24/2003	Tadashi Matsumoto	Q78530	1958

23373 7590 07/28/2006

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WASHINGTON, DC 20037

EXAMINER

PARRIES, DRUM

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/718,516

Applicant(s)

MATSUMOTO ET AL.

Examiner

Dru M. Parries

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 7 and 8 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see page 5 and 6, filed June 7, 2006, with respect to the rejection(s) of claim(s) 1 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kumegawa (JP 05-126881 A).

2. Applicant's arguments filed June 7, 2006 have been fully considered but they are not persuasive. Regarding the Piesinger reference and its combination with David, David teaches concern for the cancellation of unbalance in a circuit (Col. 3, lines 47-48; among other places) but doesn't explicitly teach how to reconfigure the switches to do so. Therefore, Piesinger is combined with David to provide an explicit explanation as to how to reconfigure the switches to re-balance the loads.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piesinger (2004/0263147), David et al. (6,018,203), and Kumegawa (JP 05-126881 A). Piesinger teaches a three-phase power distribution system providing high voltage and low voltage distribution lines ([0002]). He teaches a current transformer (TS) and a residual circuit (DS and everything downstream) (Fig. 1). He also teaches the importance of load balancing and to do that by

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transferring some of the loads from a more heavily loaded phase to a more lightly loaded one ([0003]). Piesinger fails to teach the inner circuitry of DS and how it provides power to subsequent downstream branches. David teaches a control system for canceling load unbalance of a three-phase circuit power distribution system wherein three phase power is input and distributed evenly to output branches. David's system comprises phase current detectors (16-20), phase change-over switches (22-30), a control center (12) that inherently has a phase change-over slave station because it controls all of the switches. (Col. 3, lines 64-67; Col. 4, lines 1-10; Fig. 1A) David fails to teach detecting zero-phase current and comparing it to a predetermined value to determine the necessity of phase change-over and explicitly how the cancellation of the unbalance occurs. Kumegawa teaches detecting a zero phase current and comparing it to a threshold value to determine the necessity of phase change-over. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement David's distribution system into DS with Piesinger's method of canceling load unbalance since Piesinger was silent as to what the inner circuitry of DS is and David's system is known in the art to work and perform the desired functions. It also would have been obvious to one of ordinary skill in the art at the time of the invention to implement a zero-phase current detector into the system to detect a different type of fault and in turn add another dimension of protection to the system.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Piesinger (2004/0263147), David et al. (6,018,203), and Kumegawa (JP 05-126881 A) as applied to claim 1 above, and further in view of Ellermeyer (3,555,290). Piesinger, David and Kumegawa teach a control system as described above. These references fail to explicitly teach the configuration of the switches with only three inputs. Ellermeyer teaches a configuration of a switching unit (10 &

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11) with three inputs (for the three phases) and a single output. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this switch design into the combined invention because he was silent on a precise configuration and this one is known in the art to have worked. It also would have been obvious to one of ordinary skill in the art at the time of the invention to omit the fourth input to David's switches (i.e. NC) since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. Also, if a "non-connection" configuration was needed, the switch in Ellermeyer (11) would be controlled to not make a connection to either input, therefore saving an extra switch/input.

*Allowable Subject Matter*

6. Claims 4, 7 and 8 are allowed.

The following is an examiner's statement of reasons for allowance: the references of record, either alone, or in combination, do not teach or suggest at least the limitations of: having a time limit for the phase change-over control and if the time limit expires to set off an alarm and have an over-current grounding relay malfunction.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dru M. Parries whose telephone number is (571) 272-8542. The examiner can normally be reached on Monday -Thursday from 8:00am to 5:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached on 571-272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMP

7-13-2006

  
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